WHAT IS CLAIMED IS:

1. A semiconductor laser array comprising:

a GaAs substrate;

a first laser element portion provided on said substrate to release laser light of a first wavelength; and

a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,

said first laser element portion including a first cladding layer, an active layer formed by epitaxially growing a first semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a current-blocking layer to confine an electrical current injected into said first laser element portion,

said second laser element portion including a first cladding layer, an active layer formed by epitaxially growing a second semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a current-blocking layer to confine an electrical current injected into said second laser element portion, and

said current-blocking layer of said first laser element portion and said current-blocking layer of said second laser element portion are made of same semiconductor material.

2. The semiconductor laser array according to claim 1 wherein said first and second cladding layers of said first laser element portions are made of AlGaAs, and said first and second cladding layers of said second laser element portions are made of $InGa_{1-x}Al_xP$ ($0<x\leq 1$).

3. The semiconductor laser array according to claim 1 wherein group-V species included in said second cladding layer of said first laser element portion is not identical to group-V species included in said current-blocking layer of said first laser element portion, and group-V species included in said second

cladding layer of said second laser element portion is not identical to group-V species included in said current-blocking layer of said second laser element portion.

4. The semiconductor laser array according to claim 3 wherein said second cladding layers of said first and second laser element portions are made of same semiconductor material.

5. The semiconductor laser array according to claim 4 wherein said second cladding layers of said first and second laser element portions are made of InGaAlP.

6. The semiconductor laser array according to claim 4 wherein said second cladding layer of said second laser element portion is configured as a ridge stripe extending along laser cavity lengthwise directions and both sides of said ridge stripe is buried by said current-blocking layer.

7. The semiconductor laser array according to claim 4 wherein said first wavelength ranges about 780 nm as its center, and said second wavelength ranges about one of 635 nm, 650 nm and 685 nm as its center.

8. The semiconductor laser array according to claim 4 wherein said active layer of said first laser element portion includes an AlGaAs layer, and said active layer of said second laser element portion includes an $In(Ga_{1-y}Al_y)P$ $(0 \leq y \leq 0.2)$ layer.

9. The semiconductor laser array according to claim 8 wherein said active layer of said first laser element portion has a bulk structure and said active layer of said second laser element portion has a multiple-quantum well structure.

10. A semiconductor laser array comprising:

a GaAs substrate;

a first laser element portion provided on said substrate to release laser light of a first wavelength; and

a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,

said first laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

said second laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

11. The semiconductor laser array according to claim 10 wherein said second cladding layer of said second laser element portion is configured as a ridge stripe extending along laser cavity lengthwise directions and both sides of said ridge stripe is buried by said top layer.

12. The semiconductor laser array according to claim 10 wherein said first wavelength ranges about 780 nm as its center, and said second wavelength ranges about one of 635 nm, 650 nm and 685 nm as its center.

13. The semiconductor laser array according to claim 10 wherein said active layer of said first laser element portion includes an AlGaAs layer, and said active layer of said second laser element

portion includes an $In(Ga_{1-y}Al_y)P$ ($0 \leq y \leq 0.2$) layer.

14. A manufacturing method of a semiconductor laser array having a GaAs substrate, a first laser element portion provided on said substrate to release laser light of a first wavelength, and a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength, comprising the steps of:

making a double-heterostructure of a first cladding layer, an active layer and a second cladding layer forming said first laser element portion in a location on a major surface of said GaAs substrate;

making a double-heterostructure of a first cladding layer, an active layer and a second cladding layer forming said second laser element portion on another location on said major surface of said GaAs substrate;

selectively etching said second cladding layer of said first laser element portion and said second cladding layer of said second laser element portion simultaneously to form stripes extending along laser cavity lengthwise directions, respectively; and

making an element separation groove between said first laser element portion and said second laser element portion to block an electric current therebetween.

15. The manufacturing method of a semiconductor laser array according to claim 14 further comprising a step of making current-blocking layers simultaneously in said first laser element portion and said second laser element portion between said step of selectively etching and said step of making an element separation groove.

16. The manufacturing method of a semiconductor laser array according to claim 14 wherein said first wavelength is longer than said second wavelength, and the step of making the double-heterostructure of said first laser element portion

precedes the step of making the double-heterostructure of said second laser element portion.

17. A manufacturing method of a semiconductor laser array having a GaAs substrate, a first laser element portion provided on said substrate to release laser light of a first wavelength, and a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength, comprising the steps of:

making a double-heterostructure of a first cladding layer, an active layer and a second cladding layer forming said first laser element portion in a location on a major surface of said GaAs substrate;

making a double-heterostructure of a first cladding layer, an active layer and a second cladding layer forming said second laser element portion on another location on said major surface of said GaAs substrate;

making intermediate layers having a smaller band gap than said second cladding layers on said second cladding layers of said first and second laser element portions;

selectively etching said intermediate layers of said first and second laser element portions simultaneously to form stripes extending along laser cavity lengthwise directions, respectively;

making top layers having a smaller band gap than said intermediate layers over said first and second laser element portions; and

making an element separation groove between said first laser element portion and said second laser element portion to block an electric current therebetween.

18. The manufacturing method of a semiconductor laser array according to claim 17 wherein said first wavelength is longer than said second wavelength, and the step of making the double-heterostructure of said first laser element portion precedes the step of making the double-heterostructure of said

second laser element portion.

19. An optical integrated unit comprising:

a integrated laser array including a first laser element portion and second laser element portion integrated on a common substrate, said first laser element portion releasing laser light of a first wavelength, said second laser element portion releasing light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of said first wavelength; and

detector means for detecting first return light which is part of the laser light of said first wavelength reflected back in the exterior and second return light which is part of the laser light of said second wavelength reflected back in the exterior.

20. The optical integrated unit according to claim 19 further comprising holographic optical element for diffracting first return light which is part of the laser light of said first wavelength reflected back in the exterior by a first diffraction angle and diffracting second return light which is part of the laser light of said second wavelength reflected back in the exterior by a second diffraction angle different from said first diffraction angle; and

detector means for detecting said first return light and said second return light diffracted by said holographic optical element at a substantially common detecting position.

21. The optical integrated unit according to claim 19 wherein said detector means includes first detector means for detecting first return light which is part of the laser light of said first wavelength reflected back in the exterior and second detector means for detecting second return light which is part of the laser light of said second wavelength reflected back in the exterior.

22. The optical integrated unit according to claim 21 further comprising holographic optical element for diffracting first return light which is part of the laser light of said first

wavelength reflected back in the exterior by a first diffraction angle and diffracting second return light which is part of the laser light of said second wavelength reflected back in the exterior by a second diffraction angle different from said first diffraction angle,

said first detector means detecting said first return light diffracted by said holographic optical element, said second detector means detecting said second return light diffracted by said holographic optical element.

23. The optical integrated unit according to claim 21 wherein said first detector means and said second detector means are any of a plurality of photo diodes integrated on a common substrate.

24. The optical integrated unit according to claim 19 further comprising a third laser element portion releasing laser light of a third wavelength.

25. The optical integrated unit according to claim 19 wherein said laser array has:

a GaAs substrate;

a first laser element portion provided on said substrate to release laser light of a first wavelength; and

a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,

said first laser element portion including a first cladding layer, an active layer formed by epitaxially growing a first semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a current-blocking layer to confine an electrical current injected into said first laser element portion,

said second laser element portion including a first cladding layer, an active layer formed by epitaxially growing a second semiconductor material on said first cladding layer, a second cladding layer formed on said active layer and a

current-blocking layer to confine an electrical current injected into said second laser element portion, and

said current-blocking layer of said first laser element portion and said current-blocking layer of said second laser element portion are made of same semiconductor material.

26. The optical integrated unit according to claim 19 wherein said laser array has:

a GaAs substrate;

a first laser element portion provided on said substrate to release laser light of a first wavelength; and

a second laser element portion provided on said substrate to release laser light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of the first wavelength,

said first laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

said second laser element portion including a first cladding layer made of InGaAlP, an active layer formed on said first cladding layer, a second cladding layer formed on said active layer and made of InGaAlP, a stripe-shaped intermediate layer formed on said second cladding layer and made of a semiconductor material having a smaller band gap than said second cladding layer, and top layer formed to cover said second cladding layer and said intermediate layer and made of a semiconductor material having a smaller band gap than said intermediate layer.

27. The optical integrated unit according to claim 19 further comprising a silicon substrate having at least one step portion on a major surface thereof,

said laser array being mounted on a lower part of said major surface at one side of said step portion of said silicon substrate to release the laser light of said first wavelength and the laser light of said second wavelength toward a side surface of said step portion,

said side surface of said step portion including a reflector portion for reflecting the laser light of said first wavelength and the laser light of said second wavelength approximately perpendicularly upward relative to said major surface of said substrate.

28. The optical integrated unit according to claim 19 wherein said first wavelength ranges about 780 nm as its center, and said second wavelength ranges about one of 635 nm, 650 nm and 685 nm as its center.

29. An optical pickup comprising:

an optical integrated unit including a integrated laser array and detector means, said integrated laser array including a first laser element portion and second laser element portion integrated on a common substrate, said first laser element portion releasing laser light of a first wavelength, said second laser element portion releasing light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of said first wavelength, said detector means detecting first return light which is part of the laser light of said first wavelength reflected back in the exterior and second return light which is part of the laser light of said second wavelength reflected back in the exterior; and

holographic optical element for diffracting first return light which is part of the laser light of said first wavelength reflected back in the exterior by a first diffraction angle and diffracting second return light which is part of the laser light of said second wavelength reflected back in the exterior by a second diffraction angle different from said first diffraction angle.

30. An optical pickup comprising:

an optical integrated unit including a integrated laser array and detector means, said integrated laser array including a first laser element portion and second laser element portion integrated on a common substrate, said first laser element portion releasing laser light of a first wavelength, said second laser element portion releasing light of a second wavelength different from said first wavelength in a direction substantially parallel to the laser light of said first wavelength, said detector means detecting first return light which is part of the laser light of said first wavelength reflected back in the exterior and second return light which is part of the laser light of said second wavelength reflected back in the exterior; and

an optical system for converging laser light of a first wavelength released from said optical integrated unit or laser light of a second wavelength and irradiating it onto an optical disk, and for guiding light reflected back from said optical disk to said optical integrated unit.